



Figure 15C

Multalin version 5.4.1

Copyright I.N.R.A. France 1989, 1991, 1994, 1996

Published research using this software should cite

Multiple sequence alignment with hierarchical clustering

F. CORPET, 1988, Nucl. Acids Res., 16 (22), 10881-10890

Symbol comparison table: blosum62

Gap weight: 12

Gap length weight: 2

Consensus levels: high=90% low=50%

Consensus symbols:

! is anyone of IV

\$ is anyone of LM

* is anyone of FY

is anyone of NDQEBZ

MSF: 651 Check: 0

Name: A	Len: 651	Check: 612	Weight: 0.58
Name: B	Len: 651	Check: 249	Weight: 0.58
Name: pglA	Len: 651	Check: 7677	Weight: 1.08
Name: DcbF	Len: 651	Check: 7537	Weight: 1.76
Name: Consensus	Len: 651	Check: 5816	Weight: 0.00

//

	1				50
A2	.....	.....	MSLFKR	ATELFKSGNY	KDALTLYENI
B10	.....	.....	MSLFKR	ATELFKSGNY	KDALTLYENI
pglA	MKRKKEMTQK	OMTKNPPQHE	KENELNTFQN	KIDSLKTTLN	KDIISQOTLL
DcbF	.....	.....	MSLFKR	ATELFKSGNY	KDALTLYENI
sensus	.....	.....	\$slFkr	at#lfKsgny	KDaltlyeni
	51				100
A2	AKIYG....S	ESLVKYNIDI	CKK.NITQSK	SNKIEEDNIS	GENKF.....
B10	AKIYG....S	ESLVKYNIDI	CKK.NITQSK	SNKIEEDNIS	GENKF.....
pglA	AKQDSKHPLS	ASLENENKLL	LKQLQLVLQE	FEKIITYNQA	LEAKLEKDKQ
DcbF	AKIYG....S	ESLVKYNIDI	CKK.NITQSK	SNKIEEDNIS	GENEF.....
Consensus	AKIyg....S	eSLvkyNidi	cKk.#itqsk	s#KleedNis	gEnkf.....
	101				150
A2	SVSIKDLYNE	ISNSELGITK	ERLGAPPLVS	IIMTSHNTEK	FIEASINSLL
B10	SVSIKDLYNE	ISNSELGITK	ERLGAPPLVS	IIMTSHNTEK	FIEASINSLL
pglA	TTSITDLYNE	VAKSDLGLVK	ETNSVNPLVS	IIMTSHNTAQ	FIEASINSLL
DcbF	SVSIKDLYNE	ISNSELGITK	ERLGAPPLVS	IIMTSHNTEK	FIEASINSLL
Consensus	svSIkdLYNE	!sn\$LGitK	ErlgapPLVS	IIMTSHNTek	FIEASINSLL
	151				200
A2	LQTYNNLEVI	VVDDYSTDKT	FQIASRIANS	TSKVKTFRNL	SNLGTYFAKN
B10	LQTYNNLEVI	VVDDYSTDKT	FQIASRIANS	TSKVKTFRNL	SNLGTYFAKN
pglA	LQTYKNIEII	IVDDSSDNT	FEIASRIANT	TSKVRVFRNL	SNLGTYFAKN
DcbF	LQTYNNLEVI	VVDDYSTDKT	FQIASRIANS	TSKVKTFRNL	SNLGTYFAKN
Consensus	LQTYnNlE!I	!VDDyStDkT	F#IASRIANS	TSKVktFRNL	SNLGTYFAKN

Fig. 15C cont'd

201					250
A2	TGILKSKGDI	IFFQSDDDVC	HHERIERCVN	ALLSNKDNIA	VRCAYSRLNL
B10	TGILKSKGDI	IFFQSDDDVC	HHERIERCVN	ALLSNKDNIA	VRCAYSRLNL
pg1A	TGILKSKGDI	IFFQSDDDVC	HHERIERCVN	ILLANKETIA	VRCAYSRLAP
DcbF	TGILKSKGDI	IFFQSDDDVC	HHERIERCVN	ALLSNKDNIA	VRCAYSRLNL
Consensus	TGILKSKGDI	IFFQSDDDVC	HHERIERCVN	aLLsNK#nIA	VRCAYSRLnl
251					300
A2	ETQNIIVKND	NKYKLGLITL	GVYRKVFNEI	GFFNCTTKAS	DDEFYHRIIK
B10	ETQNIIVKND	NKYKLGLITL	GVYRKVFNEI	GFFNCTTKAS	DDEFYHRIIK
pg1A	ETQHIIKVN	MDYRLGFITL	GMHRKVFOEI	GFFNCTTKGS	DDEFFHRIAK
DcbF	ETQNIIVKND	NKYKLGLITL	GVYRKVFNEI	GFFNCTTKAS	DDEFYHRIIK
Consensus	ETQnIIVK#	nkYkLGLITL	GvyRKVF#EI	GFFNCTTKaS	DDEF#HRIiK
301					350
A2	YYGKNRINNL	FLPLYNTMR	EDSLFSDMVE	WVDENNIKQK	TSDARQNYLH
B10	YYGKNRINNL	FLPLYNTMR	EDSLFSDMVE	WVDENNIKQK	TSDARQNYLH
pg1A	YYGKEKIKNL	LLPLYNTMR	ENSLFTDMVE	WIDNHNIIQK	MSDTRQHYAT
DcbF	YYGKNRINNL	FLPLYNTMR	EDSLFSDMVE	WVDENNIKQK	TSDARQNYLH
Consensus	YYGK#rInNL	fLPLYNTMR	E#SLFSDMVE	WID#nNIKQK	tSDaRQnYlH
351					400
A2	EFQKIHNERK	LNELKEIFSF	PRIHDALPIS	KEMSKLSNPK	IPVYINICSI
B10	EFQKIHNERK	LNELKEIFSF	PRIHDALPIS	KEMSKLSNPK	IPVYINICSI
pg1A	LFQAMHNETA	SHDFKNLFOF	PRIYDALPVP	QEMSKLSNPK	IPVYINICSI
DcbF	EFQKIHNERK	FNELKEIFSF	PRIHDALPIS	KEMSKLSNPK	IPVYINICSI
Consensus	eFQkiHNErk	.n#lK#iFsF	PRIhDALP!s	kEMSKLSNPK	IPVYINICSI
401					450
A2	PSRIKQLQYT	IGVLKNQCDH	FHIYLDGYPE	VPDFIKKLGN	KATVINCONK
B10	PSRIKQLQYT	IGVLKNQCDH	FHIYLDGYPE	VPDFIKKLGN	KATVINCONK
pg1A	PSRIAQLRRI	IGILKNQCDH	FHIYLDGYVE	IPDFIKNLGN	KATVVHCKDK
DcbF	PSRIKQLQYT	IGVLKNQCDH	FHIYLDGYPE	VPDFIKKLGN	KATVINCONK
Consensus	PSRIKQLqyt	IG!LKNQCDH	FHIYLDGYpE	!PDFIKkLGN	KATV!nCq#K
451					500
A2	NESIRDNGKF	ILLEKLIKEN	KDGYIITCDD	DIRYPADYTN	TMIKKINKYN
B10	NESIRDNGKF	ILLEKLIKEN	KDGYIITCDD	DIRYPADYIN	TMIKKINKYN
pg1A	DNSIRDNGKF	ILLEELIEKN	QDGYIITCDD	DIIYPSDYIN	TMIKKLNEYD
DcbF	NESIRDNGKF	ILLEKLIKEN	KDGYIITCDD	DIRYPADYIN	TMIKKINKYN
Consensus	##SIRDNGKF	ILLEkLIkEn	kDGYIITCDD	DirYPaDYiN	TMIKKinkY#
501					550
A2	DKAAIGLHGV	IFPSRVNKYF	SSDRIVYNFQ	KPLENDTAVN	ILGTGTVAFR
B10	DKAAIGLHGV	IFPSRVNKYF	SSDRIVYNFQ	KPLENDTAVN	ILGTGTVAFR
pg1A	DKAVIGLHGI	LFPSRMTRYF	SADRLVYSFY	KPLEKDKAVN	VLGTGTVSFR
DcbF	DKAAIGLHGV	IFPSRVNKYF	SSDRIVYNFQ	KTFRK.....	.....
Consensus	DKAaIGLHG!	iFPSRvnKYF	SsDRiVYnFq	Kplekd.avn	.lgtgtv.fr
551					600
A2	VSIFNKFSLS	DFEHPGMVDI	YFSILCKKNN	ILQVCISRPS	NWLTEDNKNT
B10	VSIFNKFSLS	DFEHPGMVDI	YFSILCKKNN	ILQVCISRPS	NWLTEDNKNT
pg1A	VSLFNQFSLS	DFTHSGMADI	YFSLLCCKNN	ILQICISRPA	NWLTEDNRDS
DcbF	.....	.....	.....	.....	.....
Consensus	vs.fn.fsls	df.h.gm.di	yfs.lckknn	ilq.cisrp.	nwltedn...

Fig. 15C cont'd

	601		650
A2	ETLFHEFQNR	DEIQSKLIIS	NNPWGYSSIIY PLLNNNANYS ELIPCLSFYN
B10	ETLFHEFQNR	DEIQSKLIIS	NNPWGYSSIIY PLLNNNANYS ELIPCLSFYN
pg1A	ETLYHQYRDN	DEQQTQLIME	NGPWGYSSIIY PLVKNHPKFT DLIPCLPFYF
DcbF	.....	.....	.....
Consensus	etl.h.....	de.q..li..	n.pwgyssiy pl..n..... .lipcl.fy.

	651
A2	E
B10	E
pg1A	L
DcbF	.
Consensus	.

Figure 15D

Multalin version 5.4.1
Copyright I.N.R.A. France 1989, 1991, 1994, 1996
Published research using this software should cite
Multiple sequence alignment with hierarchical clustering
F. CORPET, 1988, Nucl. Acids Res., 16 (22), 10881-10890
Symbol comparison table: blosum62
Gap weight: 12
Gap length weight: 2
Consensus levels: high=90% low=50%
Consensus symbols:
! is anyone of IV
\$ is anyone of LM
% is anyone of FY
is anyone of NDQEBZ

MSF: 651 Check: 0
Name: pmHS Len: 651 Check: 612 Weight: 0.75
Name: pglA Len: 651 Check: 7677 Weight: 0.75
Name: DcbF Len: 651 Check: 7537 Weight: 1.49
Name: Consensus Len: 651 Check: 5816 Weight: 0.00

//

	1				50
pmHS	.....	.....	....MSLFKR	ATELFKSGNY	KDALTLYENI
pglA	MKRKKEMTQK	QMTKNPPQHE	KENELNTEFQ	KIDSLKTTLN	KDIISQQTLL
DcbF	.....	.....	....MSLFKR	ATELFKSGNY	KDALTLYENI
Consensus	.....	.....	....\$s1fkr	at#1fksgny	KDaltlyeni
	51				100
pmHS	AKIYG....S	ESLVKYNIDI	CKK.NITQSK	SNKIEEDNIS	GENKF.....
pglA	AKQDSKHPLS	ASLENENKLL	LKQLQLVLQE	FEKIYTYNQA	LEAKLEKDKQ
DcbF	AKIYG....S	ESLVKYNIDI	CKK.NITQSK	SNKIEEDNIS	GENEF.....
Consensus	AKIyg....S	eSLvkyNidi	cKk.#itqsk	s#KleedNis	gEnkf.....
	101				150
pmHS	SVSIKDLYNE	ISNSELGITK	ERLGAPPLVS	IIMTSHNTEK	FIEASINSLL
pglA	TTSITDLYNE	VAKSDLGLVK	ETNSVNPLVS	IIMTSHNTAQ	FIEASINSLL
DcbF	SVSIKDLYNE	ISNSELGITK	ERLGAPPLVS	IIMTSHNTEK	FIEASINSLL
Consensus	svSikDLYNE	!snS#LGitK	ErlgapPLVS	IIMTSHNtek	FIEASINSLL
	151				200
pmHS	LQTYNNLEVI	VVDDYSTDKT	FQIASRIANS	TSKVKTFRNL	SNLGTYFAKN
pglA	LQTYKNIEII	IVDDDSSDNT	FEIASRIANT	TSKVRVFRNL	SNLGTYFAKN
DcbF	LQTYNNLEVI	VVDDYSTDKT	FQIASRIANS	TSKVKTFRNL	SNLGTYFAKN
Consensus	LQTYnNLE!I	!VDDyStDkT	F#IASRIANS	TSKVktFRNL	SNLGTYFAKN
	201				250
pmHS	TGILKSKGDI	IFFQSDDDVC	HHERIERCVN	ALLSNKDNIA	VRCAYSRINL
pglA	TGILKSKGDI	IFFQSDDDVC	HHERIERCVN	ILLANKETIA	VRCAYSRILAP
DcbF	TGILKSKGDI	IFFQSDDDVC	HHERIERCVN	ALLSNKDNIA	VRCAYSRINL
Consensus	TGILKSKGDI	IFFQSDDDVC	HHERIERCVN	aLLsNK#nIA	VRCAYSRinl
	251				300
pmHS	ETQNIIVKND	NKYKLGLITL	GVYRKVFNEI	GFFNCTTKAS	DDEFYHRIIK
pglA	ETQHIIVKNN	MDYRLGFITL	GMHRKVFEI	GFFNCTTKGS	DDEFFHRIAK
DcbF	ETQNIIVKND	NKYKLGLITL	GVYRKVFNEI	GFFNCTTKAS	DDEFYHRIIK
Consensus	ETQnIIVKN#	nkYkLGLITL	GvyRKVF#EI	GFFNCTTKaS	DDEF#HRIiK

Figure 15D cont'd

	301		350
pmHS	YYGKNRINNL	FLPLYNTMR	EDSLFSDMVE WVDENNIKQK TSDARQNYLH
pglA	YYGKEKIKNL	LLPLYNTMR	ENSLFTDMVE WIDNHNIIQK MSDTRQHYAT
DcbF	YYGKNRINNL	FLPLYNTMR	EDSLFSDMVE WVDENNIKQK TSDARQNYLH
Consensus	YYGK#rInNL	FLPLYNTMR	E#SLFSDMVE W!D#nNikQK tSDaRqNyLh
	351		400
pmHS	EFQKIHNERK	LNELKEIFSF	PRIHDALPIS KEMSKLSNPK IPVYINICSI
pglA	LFQAMHNETA	SHDFKNLFQF	PRIYDALPVP QEMSKLSNPK IPVYINICSI
DcbF	EFQKIHNERK	FNELKEIFSF	PRIHDALPIS KEMSKLSNPK IPVYINICSI
Consensus	eFQkiHNErk	.n#lK#iFsF	PRIhDALP!s kEMSKLSNPK IPVYINICSI
	401		450
pmHS	PSRIKQLQYT	IGVLKNQCDH	FHIYLDGYPE VPDFIKKLGN KATVINCONK
pglA	PSRIAQLRRI	IGILKNQCDH	FHIYLDGYVE IPDFIKNLGN KATVVHCKDK
DcbF	PSRIKQLQYT	IGVLKNQCDH	FHIYLDGYPE VPDFIKKLGN KATVINCONK
Consensus	PSRIkQLqyt	IG!LKNQCDH	FHIYLDGYpe !PDFIKklGN KATV!nCq#K
	451		500
pmHS	NESIRDNGKF	ILLEKLIKEN	KDGYIITCDD DIRYPADYTN TMIKKINKYN
pglA	DNISIRDNGKF	ILLEELIEKN	QDGYIITCDD DIYPADYIN TMIKKLNEYD
DcbF	NESIRDNGKF	ILLEKLIKEN	KDGYIITCDD DIRYPADYIN TMIKKINKYN
Consensus	##SIRDNGKF	ILLEkLikeN	KDGYIITCDD DIrYPaDYiN TMIKKiNky#
	501		550
pmHS	DKAAIGLHGV	IFPSRVNKYF	SSDRIVYNFQ KPLENDTAVN ILGTGTVAFR
pglA	DKAVIGLHGI	LFPSRMTRYF	SADRLVYSFY KPLEKDKAVN VLGTGTVSFR
DcbF	DKAAIGLHGV	IFPSRVNKYF	SSDRIVYNFQ KTRK.....
Consensus	DKAaIGLHG!	iFPSRvnKYF	SsDRiVYnFq Kplekd.avn .lgtgtv.fr
	551		600
pmHS	VSIFNKFSLS	DFEHPGMVDI	YFSILCKKNN ILQVCISRPS NWLTEDNKNT
pglA	VSLFNQFSLS	DFTHSGMADI	YFSLCKKNN ILQICISRP NWLTEDNRDS
DcbF	.....	.....	.....
Consensus	vs.fn.fsls	df.h.gm.di	yfs.lckknn ilq.cisrp. nwltedn...
	601		650
pmHS	ETLFHEFQNR	DEIQSKLIIS	NNPWGYSSII PLLNNNANYS ELIPCLSFYN
pglA	ETLYHQYRDN	DEQOTQLIME	NGPWGYSSII PLVKNHPKFT DLIPCLPFYF
DcbF	.....	.....	.....
Consensus	etl.h.....	de.q..li..	n.pwgysiiy pl..n..... .lipcl.fy.
	651		
pmHS	E		
pglA	L		
DcbF	.		
Consensus	.		